

## Proton Power Systems PLC (PPS.L)

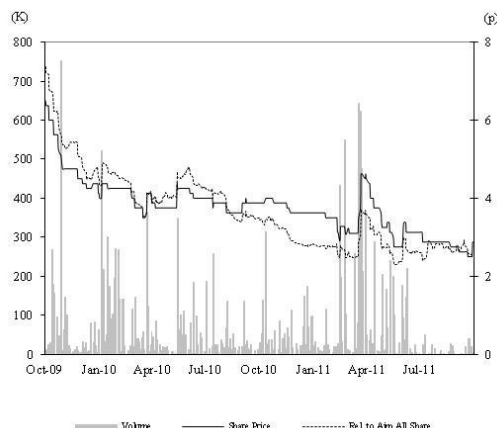
### Ready to talk

#### Summary Data

Price (p)	2.9
Market Cap (£m)	17.80
Shares in issue (m)	619.40
Sector	Alternative Energy

Source: Fidessa, Allenby Capital.

#### Share price performance



Source: Fidessa, Allenby Capital

#### Key data (Y/E 31 December)

(£k)	2009A	2010A	2011E	2012E
Revenue	193	718	912	1,003
Growth	na	272%	27%	10%
EBITDA	(4,294)	(1,262)	(2,869)	(2,730)
EBITDA Margin	na	na	na	na
Pre tax profit	(4,888)	(3,018)	(3,907)	(3,781)
EPS (p)	(5.1)	(1.8)	(1.7)	(0.6)
Growth	na	na	na	na
Net debt / (cash)	2,645	6,112	1,247	4,393
P/E (x)	na	na	na	na
EV/EBITDA	na	na	na	na

Source: Company Data, Allenby Capital

#### Key shareholders

Roundstone Properties	93.50%
Maan Abdul Wahed Al-Sanea	1.47%
Dr Gotz Heidelberg	1.02%

Source: Fidessa

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In recent years German hi-tec engineering play Proton Power Systems (“Proton”) has flown below the radar; honing its world-class Polymer Electrolyte Membrane (“PEM”) platform for commercial application in niche transport and energy markets. To date Proton has adopted the approach of rarely addressing the market; based on the rationale that it is wiser to talk only when there is something meaningful to say. The stock has performed accordingly. We believe Proton is now ready to talk; and expect quality news flow in the coming months. News should pertain to this IP rich company positioning itself with OEM partners to benefit from consolidation in the active, high growth sectors it inhabits.

**World-class, IP rich, fuel-cell technology and integrated products.** Proton has a world-class PEM fuel-cell stack; setting it apart from EU competitors who are integrators only and buy stacks from the like of Ballard in the US. Proton has integrated its stack into hybrid products for ‘back-to-base’ duty vehicle, bus and maritime markets. The core 8kW platform can also be used in stationary applications. A scaled up 20kW model is in development, cutting cost/kW and increasing potential applications. Key patented IP lies in electrode and stack design. Proton is the only independent listed European fuel-cell company targeting drive-train markets, at a time when the benefits of hydrogen fuelling compared to lengthy electrical recharge are surfacing.

**Flagship deal with Smith Electric Vehicles (“SEV”).** Proton’s key commercial activity is building a fuel-cell range extender into SEV’s ‘Newton’ light duty vehicle (“LDV”). Trialling is well advanced and SEV will sell an initial 20 units as part of a German funded program. Extended range from 120km to 200km unlocks a large, previously inaccessible, chunk of the LDV back-to-base market. Deployment of these vehicles will showcase the benefits of Proton’s technology and should accelerate uptake. SEV is the world’s most established and largest manufacturer of commercial, road-going, electric vehicles. It has multiple, global, bluechip customers.

**OEM partners include SEV, Skoda and Magna.** As well as SEV, Proton has partners in its other product areas. For ship and bus applications, Proton is working with Skoda Electric. There are also commercial relationships with large OEM’s in stationary and power-train markets including Magna. Magna is the most diversified automotive component supplier in the world. It is a global corporation with 2010 turnover of US\$25bn.

**Clean transport markets growing.** Battery, Fuel-Cell and Hybrid vehicle markets are larger than often assumed. LDVs and buses lead adoption, with EU LDV output at 250k units/yr. In mass markets all major auto companies now have a hydrogen car. In 2009 all committed to fuel-cell vehicle roll-out in Germany by 2015; including over 1000 fuelling stations. Daimler, GM and Hyundai target production in the 10,000s by 2015 and 100,000s by 2020.

**Fuel-cell ship and hybrid bus clocking up real world operational hours.** Since 2009 the Hamburg based ship powered by Proton technology has clocked up over 2000 hours of operation. Also, after stack and power train modifications, the world’s first triple Hybrid bus developed by Proton in collaboration with Skoda Electric returned to service in the Czech republic.

## Company overview

Hi-tec German engineering company Proton Power Systems (“Proton”) has 17 years experience in developing and building fuel-cell, hybrid and full drive-train systems. It has world-class technology ready for commercialisation in evolving markets. The company’s flagship deal is to fit a range extender into Smith Electric Vehicle’s ‘Newton’ model LDV. An initial 20 vehicle sale through Smith’s subsidised by the German government will showcase the benefits of Proton’s technology in the zero emission ‘back-to-base’ duty vehicle market and is expected accelerate market adoption.

### QUALITY TECHNOLOGY: IP rich platform ready for commercialisation

Proton has integrated its 8kW platform into a range of hybrid products addressing ‘back-to-base’ LDV, bus, maritime and stationary markets. A 20kW version is also under development, which will increase application scope and cut cost/kW.

### Exhibit 1: Proton’s stack, module, hybrid and integrated product portfolio



Source: Proton Power Systems/Allenby Capital

### GROWING MARKETS: Target niche markets real and growing

The extent of battery electric (“BE”), fuel-cell (“FC”) and hybrid vehicle markets is greater than is often realised. LDVs and buses lead early adoption, with EU LDV production at circa 250,000 units/yr and rising. In mainstream markets every major automotive company has launched a hydrogen car. In 2009 they signed a commitment to full FC vehicle roll-out in Germany by 2015. Daimler, GM and Hyundai plan production volumes in the 10,000’s by 2015 and in the 100,000’s by 2020. For Germany a nationwide fuel station network is also planned with more than 1000 fuelling stations. This should accelerate the shift towards fuel-cell powered vehicles.

**Exhibit 2: EV/FC/hybrid vehicles: target niche and mainstream markets**

	Annual production <sup>1)</sup>	Fuel cell applicability (2014-20) avg.	Application volume (2014-20) cum.	Average power / unit	Potential addressable market <sup>2)</sup> (2014-20) cum.
	Units	%	Units	kW	€ million
Light Duty Vehicles <sup>3)</sup>	244.000	1,4%	24.000	12	144
UPS/APU <sup>4)</sup>	70.000	4,2%	20.820	25	260
Vessels <sup>5)</sup>	125	5,5%	48	150	22
<b>Total</b>	<b>314.125</b>	<b>2,0%</b>	<b>44.868</b>		<b>426</b>

<sup>1)</sup> EU Market only  
<sup>2)</sup> 500€/kW for System (LDV & UPS)

<sup>3)</sup> 1.000 to 4.000 kg payload  
<sup>4)</sup> 25 kW average

<sup>5)</sup> 50-200 kW with 3.000 €/kW hybrid system

Source: Proton/ITM Power investor presentation/Allenby Capital

**FLAGSHIP CHANNEL PARTNER: SEV deal will showcase technology**

As part of its strategy, Proton is working with large OEM partners in each of its product areas. Proton’s key commercial activity is building a fuel-cell range extender into SEV’s ‘Newton’ light duty vehicle (“LDV”). Trialling is well advanced and SEV will sell an initial 20 unit quantity as part of a German funded project. Extended range from 120km to 200km unlocks a large, previously inaccessible, chunk of the LDV back-to-base market. Also additional features like air conditioning, heating, mobile power supply for maintenance work or for freezer boxes can be supported due to the extra power on board. Deployment of these vehicles will showcase the benefits of Proton’s technology and should accelerate uptake. SEV is the world’s most established and largest manufacturer of commercial, road-going, electric vehicles. It has multiple, global, bluechip customers. Magna from Austria is also involved in the project. Its design and test facilities are being used to ensure a high quality product will be launched into the market.

**POTTED HISTORY: 17 years of German drive-train engineering know-how**

Proton Power Systems PLC (“Proton”) is the parent of Proton Motor Fuel-Cell GmbH and is located in Puchheim, Germany. Proton Motor has been engineering industrial PEM fuel-cells, stacks, hybrid systems and full drive-train solutions for over 17 years. In 1998 Proton Motor Fuel-Cell GmbH spun out of Magnet-Motor, a firm specialising in electrical vehicle propulsion since 1980. Magnet’s fuel-cell program began in 1994 as the “missing link development” for a full electric vehicle propulsion platform. Proton’s fuel-cell development has thus always focused on hybrid and entire drive-train technology. This expertise was transferred in full to Proton Motor Fuel-Cell GmbH in 1998; a New Co founded by Dr Götz Heidelberg, who maintains a stake.

Since then Proton Motor Fuel-Cell GmbH has equipped a raft of vehicles with its fuel-cell hybrid systems, including several buses and forklift trucks. The company has been working with OEMs including Volvo (who took a minority stake), Skoda, Linde and SEV. In early 2006, Proton Motor Fuel-Cell GmbH required expansion capital and Proton Power Systems was formed as a vehicle to facilitate this. It acquired Proton Motor Fuel-Cell GmbH in a share for share exchange in April 2006; and in May 2006 Proton Power Systems listed on AIM. Since then the company has continued to hone its technology and build commercial relationships. Proton burns close to £5m cash annually. In recent years funding has come from a combination of European and German grants; and a series of convertible loans from the company’s majority stake holder Rounstone Properties (“Roundstone”) is the investment vehicle of the Nahab family. Dr Faiz Nahab is the family member authorized to manage the fund. A closer look at Dr Nahab, the recent loan conversion transaction and Proton’s balance sheet follow.

## Aggregated loan conversion transaction

On October 17<sup>th</sup> 2011 majority stakeholder Roundstone properties, the investment vehicle of the Nahab family and managed by Dr Faiz Nahab, converted aggregated loans of £8.5m into equity at a conversion price of 2p and £325k of loan interest at a conversion price of 2.62p (mid price Oct 7<sup>th</sup> 2011). The transaction takes Roundstone's holding to 93.5% of the company. Dr Nahab has an exceptional track record of success in the European industrial sector and is currently acting CEO for Proton. We believe this transaction is the first move by Proton to restructure its finances and stimulate liquidity. The timing coincides with the company starting to talk to the market about the commercial readiness and potential of its technology.

### Aggregated loan conversion transaction

On October 18<sup>th</sup> Proton's majority shareholder Roundstone Properties ("Roundstone") converted all of its outstanding convertible loans into equity at the conversion price of 2p. The aggregate loan amount was £8.5m, comprising 5 tranches of £1.5m and one tranche of £1.0m with issue dates going back to November 2009. The principal loan conversion has resulted in an increase to the number of shares in issue of 425m. Cumulative interest was also converted into equity, producing a further 12.40m shares making total new shares 437.4m. Total number of shares in issue is now 619m, of which Roundstone owns 579m, constituting 93.5% of the Proton equity.

### Roundstone and Dr Faiz Nahab

Roundstone is the investment vehicle of the Nahab family. Dr Faiz Nahab is the family member authorized to manage the fund. Following the aggregated loan conversion, Roundstone holds 93.5% of Proton's enlarged share capital. Dr. Faiz Francois Nahab became Chief Executive Officer of Proton in March 2011 and has been a Non-Executive Director of Proton since August 1, 2008. He has over 30 years experience managing and consulting on high-tech projects in the pharmaceutical, medical, electrical and industrial sectors across Europe and Middle East. Since 1981, he has owned and developed a number of multi-million dollar technology firms that acted as local partners to global companies such as Siemens, MSD and Zeiss. Dr Nahab was responsible for directing, restructuring and expansion; providing consultancy on projects, product development, sales and marketing. He also provided financial advice on budget control, banking, and project financing. Dr. Nahab has a PhD in semiconductor electronics from Kent University and academic undergraduate education in Electronics from Southampton.

### Effect on balance sheet and market capitalisation

The conversion of Roundstone's aggregated debt into equity reduces the borrowings on Proton's balance sheet to £1.3m and associated embedded derivative liabilities to zero. Equity increases by £8.5m (converted loan principal) + £325k (converted loan interest) + the value of embedded derivatives. Accordingly the market capitalisation has increased by the number of new shares post loan conversion (437.4m) multiplied by mid price

## Financials

For the purpose of these financials we have assumed future cash burn through 2012 is debt financed. The proton RNS released 17<sup>th</sup> October concerning the loan conversion actually states that the company intends to fund itself through issues of equity going forward.

### Exhibit 3: P&L and cash flow

Y/E December	£K	£K	£K	£K	
	FY 2009A	FY 2010A	FY 2011E	FY 2012E	Comments
<b>Income Statement</b>					
Revenue	193	718	912	1003	Modest revenue growth assumed through 2012
Cost of sales	(3,150)	(3,188)	(3,220)	(3,252)	
<b>Gross profit/(loss)</b>	<b>(2,957)</b>	<b>(2,470)</b>	<b>(2,308)</b>	<b>(2,249)</b>	
Fair value gain/loss on embedded derivatives	53	1,818	na	na	Embedded derivatives go to zero post loan conversion
Other operating income	20	409	430	500	
Administrative expenses	(1,844)	(1,974)	(1,994)	(2,034)	
<b>Operating profit/(loss)</b>	<b>(4,728)</b>	<b>(2,217)</b>	<b>(3,872)</b>	<b>(3,783)</b>	
Finance income	5	2	2	2	
Finance costs	(165)	(803)	(38)	-	
<b>Profit/loss for the period</b>	<b>(4,888)</b>	<b>(3,018)</b>	<b>(3,907)</b>	<b>(3,781)</b>	
Number of shares (basic) - (m)	96	166	235	662	
Number of shares (fully diluted) - (m)	96	166	235	662	
Basic Earnings/(loss) per share (p)	(5.1)	(1.8)	(1.7)	(0.6)	
<b>Diluted Earnings/(loss) per share (p)</b>	<b>(5.1)</b>	<b>(1.8)</b>	<b>(1.7)</b>	<b>(0.6)</b>	
Exchange rate effects	(487)	(51)	-	-	
<b>Total comprehensive income for the period</b>	<b>(5,375)</b>	<b>(3,069)</b>	<b>(3,907)</b>	<b>(3,781)</b>	
<b>Cash Flow Statement</b>					
<b>Profit/loss for the period</b>	<b>(4,888)</b>	<b>(3,018)</b>	<b>(3,907)</b>	<b>(3,781)</b>	
Depreciation and amortisation	434	955	1003	1053	
Interest income	(5)	(2)	(2)	(2)	
Interest expenses	165	803	38	-	
Share based payments	(18)	57	-	-	
Movement in inventories	32	(26)	-	-	
Movement in trade and other receivables	4	(327)	(160)	(76)	
Movement in trade payables	(457)	(1,051)	118	55	
Movement in fair value of embedded derivatives	(53)	(1,818)	na	na	
<b>Net cash used in operations</b>	<b>(4,786)</b>	<b>(4,427)</b>	<b>(2,911)</b>	<b>(2,751)</b>	
Interest paid	(1)	(1)	(38)	(1)	
<b>Net cash used in operating activities</b>	<b>(4,787)</b>	<b>(4,428)</b>	<b>(2,949)</b>	<b>(2,752)</b>	
Capital contribution to subsidiary	-	-	-	-	
Purchase of intangible assets	(202)	(313)	(313)	(313)	
Purchase of PP&E	(639)	(83)	(83)	(83)	
Interest received	5	2	2	2	
<b>Net cash used in investing activities</b>	<b>(836)</b>	<b>(394)</b>	<b>(394)</b>	<b>(394)</b>	
Proceeds from issue of share capital	1,057	-	-	-	
proceeds from issue of loan instruments	3,934	4,894	3,128	4,000	
<b>Net cash generated from financing activities</b>	<b>4,991</b>	<b>4,894</b>	<b>3,128</b>	<b>4,000</b>	
<b>Net increase/(decrease) in cash</b>	<b>(632)</b>	<b>72</b>	<b>(215)</b>	<b>854</b>	
Effect of FX rates	47	9	-	-	
<b>Opening cash for the period</b>	<b>772</b>	<b>187</b>	<b>268</b>	<b>53</b>	
<b>Closing cash for the period</b>	<b>187</b>	<b>268</b>	<b>53</b>	<b>907</b>	

Source: Company data, Allenby Capital

**Exhibit 4: Balance sheet**

Y/E December	£K	£K	£K	£K	
<b>Balance Sheet</b>	<b>FY 2009A</b>	<b>FY 2010A</b>	<b>FY 2011E</b>	<b>FY 2012E</b>	<b>Comments</b>
<b>Non-current assets</b>					
Intangible assets	759	247	560	873	
PP&E	793	647	730	813	
Investment in subsidiary	-	-	-	-	
<b>Current assets</b>					
inventories	105	131	131	131	
Trade and other receivables	266	594	754	830	
Cash and cash equivalents	187	268	53	907	
<b>Total assets</b>	<b>2,110</b>	<b>1,887</b>	<b>2,228</b>	<b>3,554</b>	
<b>Current liabilities</b>					
Trade and other payables	1,429	437	555	610	2011 Borrowings reduced due to conversion.
Borrowings	2,832	6,380	1,300	5,300	
Embedded derivatives on convertible loans	477	5,669	-	-	2011 derivatives on convertible loans go to zero due to loan conversion.
<b>Total Liabilities</b>	<b>4,738</b>	<b>12,486</b>	<b>1,855</b>	<b>5,910</b>	
<b>NET ASSETS</b>	<b>(2,628)</b>	<b>(10,599)</b>	<b>373</b>	<b>(2,356)</b>	
Ordinary shares	4,350	5,100	9,874	9,874	Equity increases due to loan conversion.
Share premium	7,052	8,474	18,579	19,630	
Merger reserve	15,656	15,656	15,656	15,656	
Reverse acquisition reserve	(13,862)	(13,862)	(13,862)	(13,862)	
Share option reserve	328	385	385	385	
Other equity reserve	232	-	-	-	
Foreign translation reserve	(28)	3,359	3,359	3,359	
Capital contributions	1,224	1,165	1,165	1,165	
Retained earnings	(17,580)	(30,876)	(34,783)	(38,564)	
<b>TOTAL EQUITY</b>	<b>(2,628)</b>	<b>(10,599)</b>	<b>373</b>	<b>(2,357)</b>	
Y/E December	£K	£K	£K	£K	
<b>Balance Sheet Ratios</b>	<b>FY 2009A</b>	<b>FY 2010A</b>	<b>FY 2011E</b>	<b>FY 2012E</b>	<b>Comments</b>
Long-term financial debts	2,832	6,380	1,300	5,300	
Short term financial debts	-	-	-	-	
<b>Gross debt</b>	<b>2,832</b>	<b>6,380</b>	<b>1,300</b>	<b>5,300</b>	
Cash and cash equivalents	187	268	53	907	
<b>Net debt / (cash)</b>	<b>2,645</b>	<b>6,112</b>	<b>1,247</b>	<b>4,393</b>	
Ave Net debt / (cash)	na	4,379	3,680	2,820	
Net finance expense	(160)	(801)	(36)	2	
Financing costs (int. expense/ave. net debt)	na	(0.18)	-	-	
<b>EBITDA</b>	<b>(4,294)</b>	<b>(1,262)</b>	<b>(2,869)</b>	<b>(2,730)</b>	
Equity	(2,628)	(10,599)	373	(2,357)	
Gearing (Net Debt:Equity)	(1.01)	(0.58)	3.35	(1.86)	
Net debt/ EBITDA	(0.62)	(4.84)	(0.43)	(1.61)	
EBITDA / net interest expense	26.8	1.6	na	na	

Source: Company data, Allenby Capital

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There is no planned update to this research recommendation.

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